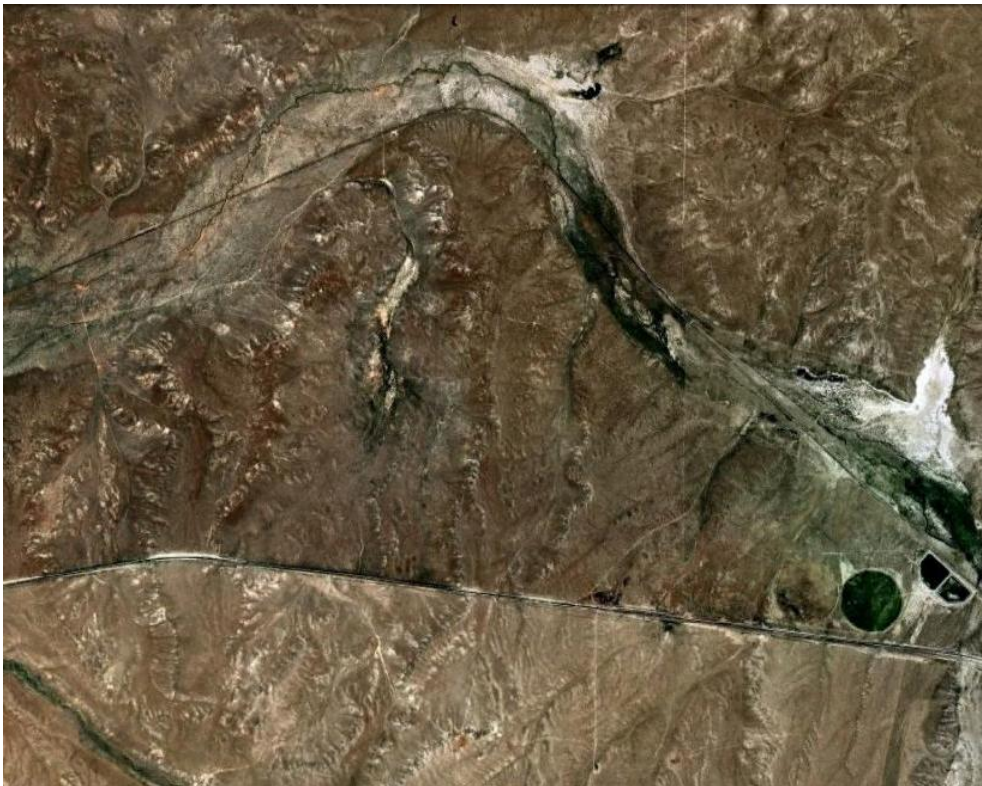


**ENVIRONMENTAL ASSESSMENT
DOI-BLM-NV-N030-2011-0009-EA**

**Marys River APD 34-26 Oil Well
Tetuan Resources Corp**



August 16, 2011

It is the mission of the Bureau of Land Management to sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

Bureau of Land Management
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1 INTRODUCTION

TETUAN RESOURCES CORP. (Tetuan) proposes to drill a wildcat oil well (a well drilled outside of or not in the vicinity of known oil or gas fields), Marys River 34-26, located in Elko County Nevada, on Oil and Gas Lease NVN-074543 on land administered by the Bureau of Land Management (BLM) (Figure 1). Mary's River 34-26 would be located on a new drill pad to be constructed at the end of a three mile access road to be built from Metropolis Road to the well pad (Figure 2). The access road would cross public and private land. Tetuan has applied for an Application for Permit to Drill (APD), a BLM Right of Way, and received approval from the private land owner. The revised location for the well would be 1,630 feet from the east line and 310 feet from the south line of Section 26, T38N, R61E, Mount Diablo Meridian (Figure 3).

Tetuan has been working with the Wells Field Office of the Elko District since the APD was submitted in November 2010. There have been several meetings, phone calls, site visits and field studies by BLM, Tetuan and their consultants during that time to refine the proposal and document natural and physical resources in support of this Environmental Assessment (EA). On February 23, 2011, a kick off meeting for the EA was held in the BLM Elko Field Office. The meeting was attended by several BLM staff, the Wells Field Office Manager, and two oil and gas staff from the Nevada State BLM Office. Also in attendance were a Tetuan representative and a manager and staff from AMEC. AMEC is a consulting firm and has been retained by Tetuan to complete cultural and biological surveys and assist in preparation of the EA.

Tetuan holds the oil and gas lease (NVN-074543) for public lands within a wildcat oil and gas area in the Bishop Flats of Elko County (Figure 4). They submitted an application for a permit to drill on November 16, 2010 for a well in the leased parcel. The Surface Use Plan of the application is incorporated by reference.

BLM has prepared this EA to comply with the National Environmental Policy Act of 1969 (NEPA). This analysis tiers to the environmental impact statement (EIS) for the 1983 Wells Resource Management Plan (BLM, 1985), and incorporates by reference pertinent information from a district-wide EA for oil and gas leasing completed in September 2005 (BLM/EK/PL-2005/030). These NEPA documents and the APD are available upon request at the BLM Elko District Office. The Wells Resource Management Plan is also available online at:

http://www.blm.gov/nv/st/en/fo/elko_field_office/blm_programs/planning.html.

1.1 PURPOSE AND NEED

The proposed action is for BLM to approve an application for an access road and drill pad to explore for oil, and if successful develop an oil well under Federal lease number NVN-074543. This EA addresses only the exploration well. If the well is productive an additional NEPA document would be prepared to address construction, operation, and maintenance. About 10% of wildcat wells are producers. Oil and gas is used to manufacture a wide variety of valuable products including fertilizer, plastic food containers, furniture, floor coverings, construction materials, pharmaceuticals, pesticides, paints, lubricating oil, fuel, paving asphalts and polymers of various kinds. The proposed action is needed to provide for timely exploration and development of energy resources on public lands, thus reducing U.S. dependence on imported supplies. The exploration for and domestic production of oil and/or gas resources on public lands would benefit the security and welfare of American citizens at risk from the disruption of energy supplies and drastically increased prices, and thus help meet the intent of Executive Order 133212 dated May 18, 2001, and the Energy Policy Act of 2005.

This action would facilitate energy development where appropriate. Wildcat wells are high risk and often result in dry holes. Leasing is authorized under Mineral Leasing Act of 1920, as amended and modified by

subsequent legislation, and regulations found at 43 CFR part 3100. BLM authority for leasing public mineral estate for the development of energy resources, including oil and gas, is listed in 43 CFR 3160. Oil and gas leasing activities are recognized as an acceptable use of the public lands under the Federal Land Policy and Management Act of 1976 (FLPMA). BLM approval of leasing activities is subject to conditions to prevent undue or unnecessary degradation of public lands and is consistent with the 1983 Wells Resource Management Plan (BLM, 1983), and the District-wide EA for oil and gas leasing completed in September 2005.

1.2 LAND USE PLAN CONFORMANCE

The proposed action is in conformance with the Wells Resource Management Plan (RMP), as approved June 23, 1985. The Record of Decision for the Wells RMP, page 25, provides that, "The public lands will be managed in a manner which recognizes the Nation's needs for domestic sources of minerals." As a standard operating procedure (SOP), the RMP prescribes that, "Time-of-day and/or time-of-year restrictions will be placed on construction activities associated with leasable and saleable mineral explorations and/or development that are in the immediate vicinity or would cross crucial sage grouse, crucial deer and pronghorn antelope winter habitats, antelope kidding areas, or raptor nesting areas." Additional Standard Stipulations that are applied to oil and gas projects are included in the Appendix A although some do not apply as the resource being protected either does not occur or is unlikely to occur in the Project Area. The proposed action is further consistent with other Federal, State and local land use policies and plans to the maximum extent possible.

2 ALTERNATIVES

2.1 PROPOSED ACTION

Tetuan proposes to drill an exploration well (depth of 7500 feet) on public land within a wild cat area. Wildcat wells are those drilled outside of and not in the vicinity of known oil or gas fields. Drilling would be done in order to determine if oil and/or gas resources do indeed exist at the site. If economic oil and/or gas resources are not encountered, the site would be reclaimed. The APD and Right-of-Way (ROW) Application are incorporated by reference.

In the event that economic quantities of oil are encountered at the location, the well and production facilities would be planned and a new NEPA document would be prepared to analyze the production, maintenance, and abandonment operations. Production facilities would include a well head with valves and choke, separator, vertical emulsion treater, fiberglass salt water tanks, welded steel oil tanks, natural gas meter along with associated pipe and fittings. If successful, oil would be transported by tanker trucks and/or pipeline to existing processing facilities. These potential actions will be briefly analyzed in the cumulative impacts section of this EA.

The planned access road for the proposed action would be approximately three miles in length, as shown in Figure 5. The location of the exploration well would be as described below:

T. 38 N., R. 61 E.
SW_{1/4}SE_{1/4}, Section 26
Mount Diablo Meridian

Operations are proposed to begin in late summer or early fall 2011, depending on confirmation of all permits and approvals from City of Wells and other Agencies and possible lease suspension. Pad, access route and sump construction, would take approximately 30 days and would commence as soon after approval as equipment is available. The drilling would follow the construction period and continue for approximately 60 to 90 days. If oil is found, production could last from one month to 50 years depending upon the resource available. Following depletion of the oil and gas resources, the site would be reclaimed.

Approximately 10-15 employees would be required for construction and drilling operations. In the event production is established, additional workers would be needed for construction and pumping operations. None of these employees would likely be new to the area because there is a trained available workforce already employed on drill rigs currently operating in northeastern Nevada.

A detailed description of the components of the proposed action from the APD is as follows:

2.1.1 Road Access

As shown on Figure 5, access to the site would leave County Rd 754 and follow an existing gravel road across City of Wells property Sections 31 and 32, T38N, R62E. The road would then follow a BLM ROW crossing the balance of Section 31, T38N, R62E, then crossing 36, 35, to the well pad in Section 26, T38N, R61E. The BLM Right of Way will be for 30 feet wide, two feet more than the Plan of Development submitted for this project. The project would include the construction of approximately 9,000 feet of new road on public land to the well site. Total disturbance for the access road and well pad would be about six acres including the 300 feet by 300 feet well pad. The road would be constructed to a maximum width of 16 feet with a 14-foot wide running surface, crowned, ditched and graveled (4 inches). Turnouts for passing (100 ft. long) would be constructed at 1250 foot intervals increasing the running surface to 24 ft. A truck turnaround would also be required and would be approximately 90-100 ft. to allow turning double trailers that would be used to haul the gravel. Less than one acre of new disturbance would occur at the gravel pit.

The new and existing access road would be constructed or maintained to withstand the anticipated loads of haul trucks (gravel, drilling mud, water, and drill rig). Water control structures would be constructed at locations specified by BLM. There are ephemeral drainages along the access alignment which may require culverts. Approximately 4,000 - 5,000 cubic yards of gravel would be obtained from the private pit located four miles northeast in Section 8, T38N, R62E, of the project along Metropolis Road. The haulage would require as many as 125-150 trips using a double belly dump tractor trailer.

2.1.2 Drill Pad

The drill pad would be constructed with the layout shown in the APD (see Figure 6). About two acres would be disturbed. The drill pad would cover an area 300 feet by 300 feet and would include a 75 feet by 150 feet reserve pit within the pad. All available topsoil would be stripped from the pad area and stockpiled for use upon final reclamation. A suitable liner, such as bentonite, would be installed in the reserve pit to prevent contamination of the groundwater. Drilling and construction operations would continue for approximately 30 to 60 days.

All drilling and support equipment would be contained within the drill pad. This equipment would include two house trailers to house the workers and provide working areas. BLM will issue specific guidelines and special stipulations that govern occupancy of public land in terms of acceptable activities and prohibited actions. The drill rig would be located next to the reserve pit and would be surrounded by support equipment including a fuel tank, boiler, light plant, parts shed, mud tanks, water tank, driller shack and pipe tubs or rack. Lighting will be shielded and directed downward wherever possible to avoid night sky lighting and to protect the pygmy rabbit colony to the northwest from light.

Pressure control equipment would include a casing head with a minimum working pressure of 3,000 psi welded on top of the surface casing. Eleven-inch ram blowout preventers would be mounted on top of the casing head along with a Reagan type annular blow out preventer mounted on top of the double ram blow out preventers. In addition, a rotating head would be installed with rotating head rubber readily available if needed. All well control equipment would have a minimum pressure rating of 3,000 psi.

In the event pressure is encountered while drilling, fluid could be diverted via a high pressure line from the casing head to a choke manifold. A choke manifold will consist of multiple valves and adjustable chokes to allow free flow to be controlled at all times.

All well control equipment would be tested to the lesser of maximum working pressure of the system if a test plug is utilized, or to a pressure equal to 75% of rated burst pressure of the casing string. An initial test would be conducted prior to drilling new formation rock below the casing string by a certified tester.

Three sides of the reserve pit would be fenced during drilling operations. Workers would access the pit during operation and will keep wildlife from entering as much as possible since it will be staffed 24 hours per day/7 days per week during drilling. The drill rig will be in place for 30-60 days. Prior to rig release, the fourth side of the reserve pit would be fenced to prevent livestock and wildlife from becoming entrapped. The pit would be left in place until it dries completely and can be filled.

The entire drill pad would be reclaimed if production is not established; otherwise areas of the drill pad not required for production would be reclaimed. The total area needed for production would not be greater than the drilling pad of 300 ft. long and 300 ft. wide. If oil production is established, the production rate may be a few hundred to two thousand barrels of oil per day. This would necessitate up to eight tractor-trailer tanker loads per day to transport the oil to the refinery in Railroad Valley, Nevada. If natural gas were encountered in commercial quantities, a small diameter transmission line would be constructed to the Ruby Pipeline, 15 miles North of the Well site. Any production and transmission/transportation activities will be subject to a future analysis in a separate NEPA document.

2.1.3 Water Supply

Water for operations and drilling would be supplied from a water well to be drilled on the well pad. Supplemental water if required would be hauled from a well on City of Wells property located two miles east of the well pad by a licensed trucking company. The operator would obtain a temporary permit from the Nevada Division of Water Resources if necessary. During construction, a water truck (4000-5000 gal.) would be used to spread water when required for dust suppression and to aid compaction and may require 5-10 loads per day (20,000-50,000 gal). During drilling, approximately 6000-8000 gallons per day of water may be required as makeup water for drilling fluid.

2.1.4 Construction Materials

All construction material for the proposed location and access road would be of native borrow (on site and off site) and soil accumulated during the construction of the location. Materials for the road and well pad would be obtained from the private material pit in Section 8 or from the BLM pit in Section 28; both pits are located north of the project and well pad (Figures 8 and 9).

2.1.5 Waste Material, Disposal, and Fire Prevention

A conventional reserve pit system is proposed in drilling of the well. Materials to be stored in the reserve pit would be restricted to drill cuttings, excess drilling mud, and fresh water. An impermeable liner would be installed in the reserve pit to prevent seepage of liquid contents into the soil or subsurface aquifer.

Prior to any hydrocarbon testing, test tanks would be on location. Produced water would neither be allowed to escape onto the surface, nor stored in the reserve pit. All produced water would be stored in tanks to minimize the environmental impact. Any oil or hazardous material that is discharged to the reserve pit during an emergency situation would be removed and disposed of in a certified injection well or other certified disposal site.

Solid waste would be contained in an appropriate receptacle on location. The receptacle would be constructed and positioned to prevent the contents from being carried off location by wind or wildlife. Burning of trash and debris would not be allowed. All waste would be disposed of appropriately at an approved disposal site. Drip pans and/or absorbent pads would be used to prevent the escape of oil or lubricants. Used motor oil would be recovered and recycled by the responsible party.

A portable toilet would be located on site for human waste during all construction, drilling and completion operations. Disposal of the waste would be accomplished off site by hauling the contents to an approved disposal site.

The following precautionary measures would be followed to help prevent wildland fires.

1. All vehicles will carry fire extinguishers.
2. Adequate firefighting equipment (i.e. shovel, pulaski, extinguisher), and/or an ample water supply should be kept at the drill site(s).
3. Vehicle catalytic converters should be inspected often and cleaned of all brush and grass debris.
4. When conducting welding operations, they should be conducted in an area free from or mostly free from vegetation. An ample water supply and shovel should be on hand to extinguish any fires created from the sparks. During welding operations, extra personnel should be on site to watch out for fires created by the sparks.
5. Report wildland fires immediately to the Elko Interagency Dispatch Center at (775) 748-4000.

2.1.6 Workforce

The temporary drilling workforce would consist of 10-15 individuals including the drilling engineer, mud engineer, tool pusher, driller, geologist, two mud loggers, and four helpers. The drilling workforce would be on site for a period of 30 to 60 days.

If the well were completed, a construction crew of three would be on site for a period of 45 to 60 days. If production were established, a part-time pumper would oversee day to day operations for the life of the well.

2.1.7 Reclamation

In the event that the well is not successful and production cannot be established, backfilling, leveling and re-contouring of the well pad would be done after the reserve pit has dried, which could take 30-180 days. The topsoil stockpile would then be spread over the disturbed area to a uniform thickness over the pad. The pad area along with the access road would be ripped on the contour at least one and one-half feet deep with rips spaced no more than one and one-half feet apart. Rehabilitation activities would be restricted to the pad and roadbed of the access route so as to prevent damage to cultural resources. Revegetation on the disturbed areas would be accomplished by broadcast seeding and covering the following pure live seed (PLS) mixture, as recommended and approved by BLM. A portion of the topsoil stockpile would be used to cover the seed approximately $\frac{1}{4}$ to $\frac{3}{8}$ inch in depth. Reclaimed areas would be signed to prevent public access and disturbance and would be fenced for a period of approximately three growing seasons to prevent livestock use and ensure successful plant establishment.

Table A. BLM Recommended Reclamation Seed Mix

<u>Species</u>	<u>Pounds per acre</u>
Snake River wheatgrass	5
bottlebrush squirreltail	1
Canby bluegrass	2
Western yarrow	2
forage kochia	1
Wyoming big sagebrush	3

2.1.8 Monitoring

At least four inspections would be done by BLM personnel to monitor the potential effects of the operations on pygmy rabbits. The pygmy rabbit colony would be monitored during operations and after operations cease to determine impacts due to the presence of people and noise. See Section 3.5.6 Mitigation and Monitoring: Wildlife for more details.

2.1.9 Additional Permits

Several additional permits may be required and would be obtained prior to commencement of construction or drilling:

Water Well Permit and Temporary Water Right	(if needed)	NV Division of Water Resources
Oil Well APD (issued in coordination with BLM APD)		NV Division of Minerals
City of Wells easement across sewer plant grounds.		City of Wells

- BLM Right of Way (ROW) Grant (in process). The BLM Right of Way (ROW) Grant is dependent upon the City of Wells granting an easement/access agreement to the proponent through private lands, and the APD Notice to Proceed is dependent upon the BLM Grant being authorized. Without the City of Wells easement/access agreement and the BLM ROW Grant there would be no access to the Lease and proposed drill site.

2.2 No Action Alternative

Under the No Action Alternative, the BLM would not authorize the proposed action. The area would remain available for other multiple use activities, as approved by the BLM. Under the No Action Alternative no drilling would be allowed at the location specified in the APD. The impacts of the proposed well, as analyzed in the next chapter of this EA, would not occur.

2.3 Alternatives Considered but Eliminated From Analysis

2.3.1 Alternative Gravel Sources

Alternate sources of gravel were considered. Distance in excess of five miles, quality to meet county road base standards and quantity of at least 7500 yards of available material were the factors used to eliminate the alternate sources. The presence of the railroad grades and other access factors also eliminated some potential sources.

2.3.2 Alternative Access Routes

Three alternative access routes were considered of which one was selected as the proposed action after consultation with BLM staff. The first alternative access route considered was north along the historic railroad grade and adjacent to the historic trail but its proximity to known and anticipated cultural resources sites eliminated it from consideration after discussions with BLM and consulting archaeologist from AMEC. The second alternative route considered is located to the south along the Union Pacific railroad but it also may have impacted one or more cultural resource sites and was eliminated. Both alternatives were originally considered on the assumption that they were “existing roads” but after on-the-ground inspection, both routes would have required considerable construction to be suitable for the required truck traffic.

3 AFFECTED ENVIRONMENT/EFFECTS

3.1 AFFECTED ENVIRONMENT

The Project Area is in Bishop Flats, about five miles northwest of the city of Wells, Nevada, on old lake sediments, with elevations around 5,500 feet. Annual precipitation is about 10 inches per year. This area is characterized as a sparsely populated agricultural area, and the dominant use of public lands is for livestock grazing within the Metropolis and City allotments. The closest buildings are located about two to three miles north and east from the project. The area is relatively flat to rolling terrain dissected by shallow swales with poorly defined ephemeral drainages. There is no permanent surface water in the Project Area and the nearest surface water is the Humboldt River, one to two miles north of the proposed drill pad location. Big sagebrush, rubber rabbitbrush, native grasses and crested wheatgrass are the dominant plants. The Alazon Fire burned approximately 220 acres of the City Allotment in the year 2000. BLM seeded approximately 180 acres with a native grass seed mix.

There are power lines, phone lines, a historic railroad grade, an active railroad with associated utility and signal poles, several communication sites, two center pivot sprinklers, and a water treatment plant within a few miles of the project. There are no exploration or production oil/gas wells within several miles of the project. There have been a few exploration wells drilled in Ruby Valley to the south but they were all dry.

Critical Elements Not Affected

The following critical elements of the human environment are not present or are not affected by the proposed action as described in this EA.

Areas of Critical Environmental Concern (ACEC)
Prime or Unique Farmlands
Floodplains
Hazardous/Solid Wastes
Threatened or Endangered Species
Wild and Scenic Rivers
Wilderness
Other State or Federally Designated Special Areas

The project is not within any unique geographic area, wilderness or wilderness study area, wild or scenic river or crucial wildlife habitat. No construction in a floodplain or riparian area is proposed. . The APD includes plans for management, containment and disposal of hazardous and solid wastes in accordance with federal and state permitting requirements.

Resources Present but Not Affected

The following resources are present within the project area but it has been determined by resource specialists they would not be affected by the proposed action.

Land Uses: Livestock grazing
Rights-of-Ways
Recreation and Off-Highway Vehicle Use (OHV)
Visual Resource Management

3.2 EFFECTS OF THE PROPOSED ACTION

The proposed action would disturb approximately six acres of sagebrush scrub vegetation, including

construction of an access road to the well site, the well pad, and the removal of material from the gravel pit. Resources or uses that are present may be affected by the proposed action and are discussed in the following subsections. They include land use (mineral materials), air quality, cultural resources, Native American concerns, water quality, soils, wetlands/riparian areas, wildlife (including special status species), migratory birds, and vegetation (including noxious weeds).

3.2.1 Air Quality and Climate

The Project Area is located in an unclassified air basin. Air quality is generally good and thus considered to be in attainment of National Ambient Air Quality Standards. There are localized occurrences of fugitive dust by high winds, vehicular traffic, and construction, but these activities have not resulted in violation of air quality standards for any criteria pollutants. The nearest classified areas are two USFS-administered Wilderness Areas located more than 10 miles to the south and 25 miles to the north. The nearest air quality monitoring location is in Elko.

Climate is typical of the northern Great Basin with hot, dry summers and cold winters with some snow. Precipitation is fairly evenly distributed throughout the year, with a total average annual precipitation of 10.2 inches. The driest months are July and August.

Effects

Project activities such as vehicular travel, blading and other ground disturbing activity could increase fugitive dust during construction and operation of the facility. Emissions would likely continue until the site is reclaimed. The Class I airsheds would not be impacted by the proposed construction because the disturbance would be very localized, small in volume, and the dominant air movement is from west to east. Minor air pollution would also result from exhaust emissions due to operation of the drill rig itself as well as heavy equipment and large trucks during construction and reclamation.

3.2.2 Cultural Resources

Several known historic cultural resources are near the Project Area which are associated with the California Trail and historic railroad to the north of the project, and the active Union Pacific Railroad, south of the project. The Project Area is near the town of Wells and the Humboldt River, both of which have played a significant role in history and prehistory. Cultural resources near the Project Area include the Union Pacific Railroad, segments of the California Trail, and several prehistoric camps. Within the eastern portion of the Well Access Road, site CrNV-01-266 was recorded in 1978. The site, a lithic scatter, was mitigated prior to the construction of the City of Wells Sewage Treatment Facility. The construction of the plant and support facilities has destroyed all surface evidence of the site within the area of potential effect (APE). A Class III cultural resources inventory was conducted within the APE for the well pad, well pad access road, two potential gravel sources, and the access road to the northern gravel source.

No cultural resources were noted at the well pad. Archaeologists did identify three isolated artifacts along the well access road. These consist of a milk bottle, an unidentifiable crushed milk can, and a 55-gallon drum. Given their location and the gently sloping valley floor, the artifacts likely washed into the APE from the nearby railroad town of Alazon. The existing gravel pit at the Pit #1 parcel was found to be inactive, with disturbances noted along the eastern boundary of the Project Area. Due to these heavy disturbances, the pit itself was not surveyed, but the APE to the west of the pit was. No cultural resources were encountered within this parcel. At the Pit #2 parcel both an existing gravel pit and its existing access road were surveyed. The gravel pit is inactive with abundant evidence of modern recreational use and associated debris. No evidence of historic or prehistoric occupation was noted within or surrounding the gravel pit or access road.

Effects

Based on the results of the Class III survey of the Project Area, it is determined that the proposed activity will not adversely affect cultural resources in the Project Area. Three isolated finds were recorded along the well pad access road. Isolated finds are categorically not eligible under the State Protocol between the Nevada SHPO and Nevada BLM (2009). Project activities are not widespread and are limited to a relatively small area. Surface disturbance is limited to 5-10 acres so it is unlikely that unknown archaeological sites would be impacted.

While the California Historic Trail is located two miles to the north from the drill pad, drill rigs that may be used range from 100-140 feet in height so they would not be visible from the trail. The trail is at a lower elevation except for a very limited window if at all due to the intervening terrain (Figure 7). There may be some dust from traffic or construction but would of short duration (several trips per day) and only temporary (60-180 days).

3.2.3 Native American Concerns

Various tribes and bands of the Western Shoshone have stated that federal projects and land actions can have widespread effects to their culture and religion as they consider the landscape as sacred and as a provider. The proposed well site is located within the traditional territory of the Western Shoshone.

Tribal participants of the Wells Band of Western Shoshone are aware of the proposed action through BLM's notification process and have been provided the opportunity for additional Government to Government consultation.

Effects

Based on discussions with tribal members /representatives and considering the description and location of the project, BLM has determined that this activity will not adversely affect any Native American religious site or religious practice or ceremony. The project is not within a known Traditional Cultural Property. Existing ethnographic information does not suggest that Native American traditional, spiritual and/or cultural sites would be affected. During the project activities, if any cultural properties, items, or artifacts (stone tools, projectile points, etc.) not previously recorded by BLM are encountered, it must be stressed that such items are not to be collected and that the BLM, Elko Field Office must be notified of the discovery (775-753-0200).

Also, though the possibility of disturbing Native American gravesites within the project area is extremely low, inadvertent discovery procedures must be noted. Under the Native American Graves Protection and Repatriation Act, section (3)(d)(1), it states that the discovering individual must notify the land manager in writing of such a discovery. If the discovery occurs in connection with an authorized use, the activity, which caused the discovery, is to cease and the materials are to be protected until the land manager can respond to the situation.

3.2.4 Water Quality (Surface/Ground)

The only surface water resource in the vicinity of the proposed drill pad is the Humboldt River, approximately 1.5 miles to the north. The depth to groundwater is not known but would be determined during drilling of the water well. No springs were noted during site visits or surveys although the maps show a spring one mile to the south of the project adjacent to the Union Pacific railroad. Water draining from the Project Area would normally terminate in the Humboldt River.

Effects

In general, ground disturbing activities and facility operation lead to increased surface runoff, erosion, and

possible discharge of sediment downstream. The result would be the possibility of increased sediment discharge into the Humboldt River during and following drill site operation. The Energy Policy Act of 2005 amended Section 502 of the Clean Water Act by changing the definition of oil and gas exploration and production to encompass field activities, and Section 402(l)(2) of the CWA to exempt certain entities from a requirement to obtain National Pollution Discharge Elimination Permits (NPDES) except in very limited circumstances. The Environmental Protection Agency published a final rule in the Federal Register consistent with the amendments on June 12, 2006. Because of the limited size of the proposed disturbance, it is expected that any sediment would be captured by the intervening vegetation and the flow would not be sufficient to reach the river. Installation of flow and sediment control structures could be used to reduce sediment discharge. While the overall groundwater budget for the basin has not been quantified, the use of ground water by this project would be on-site use for dust suppression and drilling and would be infrequent (as needed during dry periods and when fugitive dust is prevalent) and temporary for drilling (60-120 days). The use of water could range from 6000 gal per day during drilling to 50,000 gallons per day during construction. Neither of these uses would produce any discharge beyond the immediate road and drill pad area. The water use will be in compliance with requirements of the Nevada Division of Water Resources who has primary jurisdiction.

Best Management Practices would also reduce the likelihood of impacts to groundwater. Proper casing of the well would protect against mixing of aquifers or drawdown of aquifers. The reserve pit would be lined with bentonite to prevent contamination of the water table. If the well is successful and oil is produced, containment berms constructed around the storage tanks and oil loading areas would contain any spills.

3.2.5 Soils

The soils in the Project Area were mapped by the Natural Resources Conservation Service (NRCS) as part of soil surveys for the northeast part of Elko County (NRCS unpublished data available online). The Project Area soils are typical of the transition area between alluvial fans and flood plains throughout much of the Great Basin. The terrain is flat to gently sloping. All of the soils within the Project Area have alluvium parent material derived from mixed rocks, loess, and volcanic ash. Most are well drained and tend to experience little to no flooding or ponding.

Within the well pad and access road portion of the Project Area, the two main soils present are the Chiara-Kelk-Kelk rarely flooded association and the Enko-Kelk-Enko nearly level association. Together, these two associations make up 87.8% of the parcel (72.7% and 15.1% respectively). Also present are the Sonoma-Devilsgait-Sonoma occasionally flooded association (7.4% of the parcel) and the Valmy-Enko association (4.9% of the parcel). The Chiara-Kelk-Kelk, rarely flooded association is characterized by silt loam at the surface and has moderate to high erosion hazard by water and moderate erosion hazard by wind. The Enko-Kelk-Enko nearly level association is characterized by fine sandy loam to silt loam at the surface with moderate erosion hazard by water and moderate erosion hazard by wind. The Sonoma-Devilsgait-Sonoma occasionally flooded association is characterized by silty clay loam to silt loam at the surface with moderate erosion hazard by water and moderate erosion hazard by wind. The Valmy-Enko association is marked by fine sandy loam at the surface, low to moderate erosion hazard by water and moderate erosion hazard by wind.

The Gravel Pit #2 Parcel (Private land) is entirely covered by the Wieland-Hunnton-Hunewell which is characterized by gravelly loam at the surface, with moderate erosion hazard by water and low erosion hazard by wind. The Gravel Pit #1 Parcel (public land administered by BLM) has only soil association Enko-Chiara-Kelk which is characterized by fine sandy loam to silt loam at the surface with moderate to high erosion hazard by water and moderate erosion hazard by wind.

Effects

Approximately six acres would be disturbed under the proposed action. Project activities could damage soil

structure, result in the mixing of soil horizons which could cause an increase or decrease in productivity after reclamation, and increased wind and water erosion where vegetation is disturbed or removed. The drill site and access road would have accelerated road runoff as a result of compacted soils. Implementation of the Best Management Practices Handbook (Nevada State Environmental Commission, 1994) and Nevada Contractors Field Guide for Construction Site Best Management Practices, (Nevada Division of Environmental Protection, 2008) would minimize soil lost from the site. If the drill site were found unproductive, the pad would be reclaimed and erosion potential would decrease once vegetation is reestablished. It is anticipated to leave the access road in place for future exploration, and it would be reclaimed at a later date.

3.2.6 Wetlands and Riparian Areas

No wetlands or riparian areas are present within the Project Area. The nearest wetland area is associated with the Humboldt River but is not expected to be impacted by the proposed Project because of the distance from the disturbance, the gradual slope, and the intervening vegetation cover, which is in relatively good condition. The riparian area along the Humboldt is characterized by wet meadows and typical Great Basin riparian vegetation including mixtures of grasses, forbs, sedges, rushes and willows. Dominant species include Baltic rush (*Juncus balticus*), Nebraska sedge (*Carex nebrascensis*), redtop (*Agrostis* spp.), cinquefoil (*Potentilla gracilis*), Kentucky bluegrass (*Poa pratensis*) and common dandelion (*Taraxacum officianale*). The drainage also supports scattered willow (*Salix* spp.). Facultative species present are due to previous disturbances to the riparian area of the Humboldt River.

Effects

Although wetlands and riparian zones are not directly affected; potential exists for increased runoff and sediment delivery to the Humboldt River via intermittent drainages near the project site.

3.2.7 Terrestrial Wildlife

A species list for wildlife resources observed in the vicinity of the Project Area is available in the March 3 letter from Nevada Department of Wildlife (NDOW) (Appendix B) and is included in the analysis of effects below.

Terrestrial Wildlife Species

Big Game Species

NDOW records indicate that the Project Area is elk (*Cervus elaphus nelsoni*) and pronghorn antelope (*Antilocapra americana*) habitat (NDOW, 2011). Elk are found in low densities; the area is antelope summer range (Burton, 2011). The Project Area is not bighorn sheep (*Ovis canadensis nelsoni*) habitat; however, habitat is found to the south of the Project Area (NDOW, 2011). Deer use the area only incidentally (Burton, 2011). The habitat for antelope, deer, and elk is marginal due to the absence of preferred forage species (perennial grass, palatable forbs, and preferred browse species). The area also lacks surface water nearby which would be needed by all three species. No elk, antelope or deer were observed during the February, March and May 2011 survey periods although occasionally antelope scat was seen.

Effects

Impacts from noise and human disturbance would occur to any terrestrial wildlife species that are present in the Project Area when drilling activities begin. Most highly mobile wildlife species would likely avoid the disturbance by leaving the area and moving to adjacent areas which may already be at or near carrying capacity. Less mobile mammalian and reptilian species would likely be temporarily displaced during explorations activities. In some instances, less mobile wildlife species that use burrows could be killed as a result of exploration activities. The removal of vegetation or ground disturbance would adversely impact these terrestrial species. Reclamation of sites where vegetation was removed would help mitigate the loss of habitat for area wildlife, although it would not fully replace native habitat, especially for slowly growing

species such as sagebrush. Much of the area is in early to mid seral stages due to past disturbance from fire and livestock grazing. However, some species, such as deer, antelope, and elk might actually prefer the reclaimed sites depending on species included in the reseeding mix. Other wildlife species such as sagebrush obligates would be expected to decline or to disperse from the area, due to the long time required to reestablish mature sagebrush.

Should noxious or nonnative invasive plant species establish themselves where vegetation was removed or disturbed there would be a loss of native vegetation/habitat for wildlife species. However, adherence to standard Elko District invasive weed protocol and prevention measures and continued monitoring and treatment, if necessary should ensure that noxious or nonnative invasive plants do not become established due to the proposed action.

If no oil production or temporary oil production occurs and reclamation efforts are successful, the reclaimed area would again provide foraging areas for both non-game and game wildlife species. If more permanent development occurs, there would be a long-term loss of habitat associated with the proposed action and possible wildlife avoidance of the Project Area due to the continual presence of humans and noise from equipment and machinery. Some wildlife species would habituate to the structures and human disturbance over time and again utilize habitats in the vicinity of the Project Area.

3.2.8 Special Status Species

In an effort to determine which special status species might occur in the Project Area, information requests were submitted to the U.S. Fish and Wildlife Service (USFWS), Nevada Department of Wildlife (NDOW) and the Nevada Natural Heritage Program (NNHP) prior to site visits and in preparation of this document. The species discussed below represent those of special interest to the USFWS, NDOW, NNHP, and BLM.

BLM policy (516 DM 6840) defines special status species to include:

- ***Federally Threatened or Endangered Species:*** Any species that the U.S. Fish and Wildlife Service has listed as an endangered or threatened species under the Endangered Species Act (ESA) throughout all or a significant portion of its range.
- ***Proposed Threatened or Endangered Species:*** Any species that the USFWS has proposed for listing as a Federally endangered or threatened species under the Endangered Species Act.
- ***Candidate Species:*** Plant and animal taxa that are under consideration for possible listing as threatened or endangered under the Endangered Species Act.
- ***BLM Sensitive Species:*** Species 1) that are currently under status review by the U.S. Fish and Wildlife Service, 2) whose numbers are declining so rapidly that Federal listing may become necessary; 3) with typically small and widely dispersed populations; or 4) that inhabit ecological refugia or other specialized or unique habitats.
- ***State of Nevada Listed Species:*** State-protected animals that have been determined to meet BLM's Manual 6840 policy definition. Nevada protected animals are those species of animals occurring on BLM-managed lands in Nevada that are: (1) "protected" under authority of Nevada Administrative Codes 501.100 – 503.104; (2) have been determined to meet BLM's policy definition of "listing by a State in a category implying potential endangerment or extinction," and (3) are not already included as a federally listed, proposed, or candidate species.

3.2.8.1 Federally Listed, Proposed or Candidate Species

Actions that may affect species that are federally listed, or are proposed for listing, as threatened or endangered are subject to consultation or conference under Section 7 of the ESA.

No federally listed, proposed or candidate species occur in the Project Area. No federally listed or proposed

species, and no critical habitat, has been designated or proposed for designation that is found within the project area.

3.2.8.2 BLM Sensitive Species

Nevada BLM policy is to provide State of Nevada Listed Species and Nevada BLM Sensitive Species with the same level of protection as is provided for candidate species in BLM Manual 6840.06C.

Sensitive Plants

Based on the information provided by the NNHP (NNHP, 2011) there are no known sensitive plant species within the vicinity of the proposed action.

Sensitive Wildlife Species

Table B lists the special status wildlife species that may occur in the vicinity of the proposed action. The list is based on input provided by the U.S. Fish and Wildlife Service, Nevada Natural Heritage Program (NNHP), and NDOW. The Nevada BLM-Sensitive Species are from Instruction Memorandum No. NV-2003-097 (July 29, 2003).

Table B. BLM Sensitive Species

COMMON NAME	SCIENTIFIC NAME
Birds	
Greater Sage-Grouse	<i>Centrocercus urophasianus</i>
Bald Eagle	<i>Haliaetus leucocephalus</i>
Golden Eagle	<i>Aquila chrysaetos</i>
Prairie Falcon	<i>Falco mexicanus</i>
Swainson's Hawk	<i>Buteo swainsoni</i>
Ferruginous Hawk	<i>Buteo regalis</i>
Burrowing Owl	<i>Athene cunicularia</i>
Short-eared Owl	<i>Asio flammeus</i>
Loggerhead Shrike	<i>Lanius ludovicianus</i>
Black-rosy Finch	<i>Leucosticte atrata</i>
Vesper Sparrow	<i>Poocetes gramineus</i>
Mammals	
Pygmy Rabbit	<i>Brachylagus idahoensis</i>
Big Brown Bat	<i>Eptesicus fuscus</i>
Small-footed Myotis	<i>Myotis ciliolabrum</i>
California Myotis	<i>Myotis californicus</i>
Long-eared Myotis	<i>Myotis evotis</i>
Long-legged Myotis	<i>Myotis volans</i>
Yuma Myotis	<i>Myotis yumanensis</i>
Townsend's Big-eared Bat	<i>Plecotus townsendi</i>
Brazilian Free-tailed Bat	<i>Tadarida brasiliensis</i>

Birds

Seasonal restrictions for specific raptor and migratory birds would be included in the stipulations that are derived from the standard stipulations if surface disturbance occurs during their nesting season and these species are determined by survey to be present within the project area. These restrictions generally occur from early spring (March 1) through late summer (July 31).

Greater Sage-grouse – NDOW has identified the Project Area as sage-grouse nesting and wintering habitat because some of the area contains mature sagebrush of adequate density and cover. The Project Area is in the O’Neil Basin Population Management Unit (PMU) (Burton, 2011). Two known lek sites are located approximately three miles from the project access road and drill pad. One lek site is known to be inactive and the status of the second is unknown (NDOW, 2011). No sage-grouse or sign were observed during the February, March, and May 2011 site visits. The gravel pits would require the application of the sage-grouse seasonal stipulations since there may be active leks within the specified three mile perimeter.

Bald Eagle - No nesting habitat is available for the bald eagle within the Project Area; however, foraging habitat is available (Burton, 2011). No bald eagles were observed during the February, March, and May 2011 site visits.

Golden Eagle – The area provides foraging habitat where prey species are primarily small mammals. Black-tailed jackrabbits provide the primary forage base. No nests occur in the Project Area; however NDOW has identified three nest sites located within 10 miles of the Project Area (NDOW, 2011). No golden eagles were observed during the February, March, and May 2011 site visits.

Prairie Falcon - The area provides foraging habitat for this species where prey species are primarily small mammals. Black-tailed jackrabbits provide a forage base. One prairie falcon nest is known to occur in the vicinity of the Project Area (Burton, 2011). No prairie falcons were observed during the February, March, and May 2011 site visits.

Swainson’s Hawk – Sagebrush-grass habitat provides foraging habitat during the summer period and during migration or seasonal movement events. One Swainson’s hawk nest is known to occur in the vicinity of the Project Area (Burton, 2011). No Swainson’s hawks were observed during the February, March, and May 2011 site visits.

Ferruginous Hawk – No nesting habitat is available on the Project Area. However foraging habitat is available. Four ferruginous hawk nests are located within the vicinity of the Project Areas (NDOW, 2011) although no ferruginous hawks were observed during the February, March, and May 2011 site visits.

Northern Goshawk – Nesting and foraging habitat for the goshawk occurs in the vicinity of the Project Area. One northern goshawk nest is known to occur in the vicinity of the Project area (Burton, 2011). No northern goshawks were observed during the February, March, and May 2001 site visits.

Burrowing Owl - This species could occur within the area. Abandoned mammal burrows, such as those created by badgers, squirrels and rabbits help to provide nesting habitat. This species tends to use disturbed or open sites with minimal vegetation for nesting and loafing. No burrowing owl nest sites are known to occur in the vicinity of the Project Area (NDOW, 2011), and no burrowing or sign were observed during the February, March, and May 2011 site visits.

Short-Eared Owl - The area provides nesting and foraging habitat for this ground-nesting species. No short-eared owls are known to nest in the vicinity of the Project Area (NDOW, 2011), and no short-eared owls were observed during the February, March, and May 2011 site visits.

Vesper Sparrow – This species is a ground-nester. Relative to the area, it is associated with sagebrush-grasslands. The area provides potential nesting and foraging habitat. No nest or vesper sparrow was observed during the February, March, and May 2011 site visits.

Loggerhead Shrike – Potential nesting habitat is provided in the area primarily by basin big sagebrush and

Wyoming big sagebrush. Foraging habitat is provided in sagebrush-grass areas with variable canopy cover of brush species. No nests or shrikes were observed during the February, March, and May 2011 site visits.

Black-rosy Finch – The area provides suitable winter habitat in sagebrush-grasslands. No rosy finches were observed during the February, March and May 2011 site visits.

Mammals

Pygmy Rabbits - Pygmy rabbits are a BLM Sensitive Species. Pygmy rabbits are found in a variety of vegetation types that include big sagebrush with friable soils that are suitable for creating their burrow system. The proposed site was visited by MACTEC biologists in the months of February, March and May 2011 and pygmy rabbit sign (scat) was found on the original proposed well pad site. Following subsequent visits by a BLM biologist it was confirmed that pygmy rabbit were present on the proposed project well pad site. The proposed well pad was then shifted to the southeast to avoid or minimize impacts to the existing pygmy rabbit population. The proposed well pad is now located outside of the colony, but within 100 feet of the last outlying burrows along the SE edge. The sump and berm work would be erected between the colony's edge and exploration activity to add an additional protection buffer.

Bats

Big brown bat - This species could occur in the Project Area although no big brown bats were observed during the diurnal February, March, and May site visits.

Small-footed myotis — This species could occur in the area. This species is known to forage in sagebrush habitats of eastern Nevada. No small-footed myotis were observed during the diurnal February, March, and May site visits.

California myotis – This species could occur in the Project Area although no California myotis were observed during the diurnal February, March, and May site visits.

Long-eared myotis — This species could occur in the Project Area although no long-eared myotis were observed during the diurnal February, March, and May site visits.

Long-legged myotis — This species could occur in the Project Area although no long-eared myotis were observed during the diurnal February, March, and May site visits.

Yuma myotis – This species could occur in the Project Area although no Yuma myotis were observed during the diurnal February, March, and May site visits.

Townsend's big-eared bat - This species could occur in the Project Area although no long-eared myotis were observed during the diurnal February, March, and May site visits.

Brazilian free-tailed bat - This species could occur in the Project Area although no Brazilian free-tailed bats were observed during the diurnal February, March, and May site visits.

Amphibians

Columbia Spotted Frog (Rana luteiventris) – This species has the potential to occur in the Humboldt River drainage located approximately one to two miles from the Project Area. Data provided to the BLM from the Nevada Heritage Group indicates the presence of the Columbia spotted frog (Burton, 2011). Columbia spotted frogs in Nevada are found closely associated with slow-moving or ponded surface waters which are clear and with little or no canopy cover (Reaser, 1997). Reproducing populations were found in habitats characterized by springs, floating vegetation, and larger bodies of pooled water (e.g., oxbows, lakes, stock

ponds, beaver-created ponds, springs, seeps in wet meadows, backwaters) (IDFG et al. 1995, Reaser ,1997). No Columbia spotted frogs were observed during the February, March and May site visits to the project area. However, no surveys were conducted along the Humboldt River.

3.2.8.3 Nevada State Protected Species

The NDOW stated that habitat for the Deeth buckwheat, *Erigonum nutans* var. *glabratum*, a Taxon determined to be Imperiled by the Nevada Natural Heritage Program, may be available in the Project Area. However, no records of Deeth buckwheat occur in the Project Area, and no evidence of this species was observed during any of the February, March and May site visits.

Effects

Overall, the effects of the proposed action on sensitive birds, mammals and amphibians that may occur in the area would be the same as those described above for terrestrial wildlife. The proposed action could occur within some sensitive species breeding and brood-rearing areas. The majority of the sensitive birds and mammals are mobile and would likely avoid the site while operations are in progress. The exception would be breeding/nesting birds and mammals including the pygmy rabbit and migratory birds. These animals would likely be impacted by the noise and disturbance of exploration activities. This disturbance could cause the animals to abandon their nests and leave the area. Exploration activities may also destroy nests and dens of ground or shrub nesting species. Road construction and drilling operations are currently planned for completion outside of the nesting season to avoid adverse impacts to these species.

Surface use associated with drilling the exploration well is not expected to affect bald eagles or any other raptors that may forage or winter in the area. Individual birds of this group would leave the area if disturbed and forage or winter in another area, so are not expected to be more than minimally impacted.

However, if well production occurs, there would be a long-term loss of habitat for the six acres of disturbance and possible avoidance of the project and surrounding area due to human and equipment/machinery disturbance. Some species may habituate to the structures and people and utilize habitat in the proximity of the exploration activities.

Should exploration activities be planned for the breeding/nesting season, a search for sage-grouse nests and pygmy rabbit dens would be required. In addition, a nest search for all migratory birds would be required. Limited operating periods and areas of protection would be established for active nest sites to minimize or avoid impacts to sensitive species.

No impacts to bats are expected to occur from exploration activities.

3.2.9 Migratory Birds

Migratory birds are protected under the Migratory Bird Treaty Act of 1918. Under the provisions of the Migratory Bird Treaty Act, the unauthorized take (death or injury) of migratory birds is a strict liability criminal offense that does not require knowledge or specific intent on the part of the offender. The U.S. Fish and Wildlife Service is responsible for issuing a permit to allow take of a migratory bird. References to species of concern in the Executive Order pertain to those bird species listed in 50 CFR 17.11, and in established plans such as for Partners in Flight physiographic areas.

The proposed action area is characterized by the basin big sagebrush vegetation types that provide foraging areas and cover diversity for migratory birds. **Table C below** lists the migratory bird species from the Nevada Partners in Flight Bird Conservation Plan that are a priority for management and are associated with the sagebrush habitat type. This list includes some birds that are discussed in the previous section for BLM Sensitive Species, which are shown in **bold** type in the table.

Table C. Migratory Birds Expected to Occur in Sagebrush Habitat

COMMON NAME	SCIENTIFIC NAME
Black Rosy Finch	<i>Leucosticte atrata</i>
Greater Sage-Grouse	<i>Centrocercus urophasianus</i>
Turkey Vulture	<i>Cathartes aura</i>
Red-tailed Hawk	<i>Buteo jamaicensis</i>
Ferruginous Hawk	<i>Buteo regalis</i>
Rough-legged Hawk	<i>Buteo lagopus</i>
Gray Flycatcher	<i>Empidonax wrightii</i>
Loggerhead Shrike	<i>Lanius ludovicianus</i>
Vesper Sparrow	<i>Poocetes gramineus</i>
American Kestrel	<i>Falco americanus</i>
Prairie Falcon	<i>Falco mexicanus</i>
Sage Sparrow	<i>Amphispiza belli</i>
Sage Thrasher	<i>Oreoscoptes montanus</i>
Swainson's Hawk	<i>Buteo swainsoni</i>
Northern Harrier	<i>Circus cyaneus</i>
Burrowing Owl	<i>Athene cunicularia</i>
Calliope Hummingbird	<i>Stellula calliope</i>
Brewer's Sparrow	<i>Spizella breweri</i>
Western Meadowlark	<i>Sturnella neglecta</i>
Black-throated Sparrow	<i>Amphispiza bilineata</i>
Lark Sparrow	<i>Chondestes grammacus</i>
Green-tailed Towhee	<i>Pipilo chlorurus</i>
Brewer's Blackbird	<i>Euphagus cyanocephalus</i>
Horned Lark	<i>Eremophila alpestris</i>
Rock Wren	<i>Salpinctes obsoletus</i>
Western Bluebird	<i>Sialia mexicana</i>
Mountain Bluebird	<i>Sialia currucoides</i>
House Finch	<i>Carpodacus mexicanus</i>
Common Raven	<i>Corvus corax</i>
Common Poorwill	<i>Phalaenoptilus nuttallii</i>
Common Nighthawk	<i>Chordeiles minor</i>
Cliff Swallow	<i>Petrochelidon pyrrhonota</i>
American Robin	<i>Turdus migratorius</i>
Brown-headed Cowbird	<i>Molothrus ater</i>

Effects

The effects of the proposed action on migratory birds would be the similar to those discussed in the previous sections for terrestrial wildlife and sensitive species. Birds nesting in the Project Area would be using shrubs or the ground as nesting habitat. The destruction of bird nests and young would be avoided if exploration activities occurred outside the avian breeding season (March 15 to July 31) by application of the seasonal restrictions outlined as part of the proposed action. Habitat for these birds would be impacted by the removal or damage of shrubs and ground disturbance. Reclamation of sites where vegetation would be removed would help to mitigate the loss of habitat for area birds. Construction is not proposed during the nesting or brood-rearing season (March 15- July 31); therefore no impacts to migratory birds should occur as a result of the proposed project.

3.2.10 Vegetation, Including Invasive Non-Native Plant Species

The vegetation on the project site consists mostly a mid seral native sagebrush-grassland. Plant species commonly found on this site include: Indian ricegrass (*Achnatherum hymenoides*), Sandberg's bluegrass (*Poa secunda*), Thurber's needlegrass (*Achnatherum thurberianum*), Great Basin wildrye (*Leymus cinereus*), bluebunch wheatgrass (*Pseudoroegneria spicata*), bottlebrush squirreltail (*Elymus elymoides*), creeping wildrye (*Elymus repens*), western wheatgrass (*Pascopyrum smithii*), Wyoming big sagebrush (*Artemisia tridentata* ssp. *wyomingensis*), antelope bitterbrush (*Purshia tridentata*), basin big sagebrush (*Artemisia tridentata* ssp. *tridentata*), black greasewood (*Sarcobatus vermiculatus*), black sagebrush (*Artemisia nova*), spiny hopsage (*Grayia spinosa*), and rubber rabbitbrush (*Ericameria nauseosa*) (NRCS, 2011).

The Alazon Fire of 2000 burned approximately 220 acres of wildlife habitat, and BLM reseeded approximately 180 acres with a native grass seed mix. A portion of the burned areas is located within the Project Area.

The BLM defines an invasive weed as, "A non-native plant that disrupts or has the potential to disrupt or alter the natural ecosystem function, composition and diversity of the site it occupies. Its presence deteriorates the health of the site, it makes efficient use of natural resources difficult and it may interfere with management objectives for that site. It is an invasive species that requires a concerted effort (manpower and resources) to remove from its current location, if it can be removed at all." (BLM National List of Invasive Weed Species of Concern).

Invasive and non-native plant species may spread from infested areas by people, equipment, livestock, wildlife, and winds. They often exhibit aggressive growth and have the potential to seriously degrade the economic and ecological values of natural resources. Under Executive Order 13112, it is the policy of the land management agencies to prevent introduction of noxious weeds, invasive and non-native species and to control their impact (NISC, 2010). Nevada Revised Statute 555.005 defines noxious weeds as plants which are likely to be "detrimental or destructive and difficult to control or eradicate." The state of Nevada classifies noxious weeds into three categories as defined below.

The BLM's GIS database was evaluated to find what weeds are known to exist within or adjacent to the project area and these include: Scotch thistle (*Onopordum acanthium*), Canada Thistle (*Cirsium arvense*), and whitetop (*Cardaria draba*). Weeds suspected (although not confirmed) to exist within the project boundary include bull thistle (*Cirsium vulgare*) and Canada thistle (*Cirsium arvense*). Cheatgrass (*Bromus tectorum*) and halogeton (*Halogeton glomeratus*) are both invasive, annual species which also occurs within the project area. Although weeds do occur within the project area they are generally found in low densities widely scattered across the landscape.

A noxious weed inventory was conducted on February 22, March 10, and March 14, 2011 within the project area and the only invasive, nonnative plant species observed in the drill pad area was cheatgrass (*Bromus tectorum*).

Effects

The effects on vegetation within the project area would be dramatic without revegetation. After the project is completed Tetuan Resources will initiate revegetation rehabilitation on this site in order to restore the vegetation to a condition similar to what currently exists.

Any ground disturbing activity will potentially increase noxious weed distribution and abundance. This would occur whether the activity was manmade (OHV use, dispersed camping, mining, grazing,

etc.) or natural (fire, wildlife grazing, etc.). This project will disturb approximately six acres of land which could increase the spread and establishment of noxious weeds. But by using both preventive (washing equipment, weed free gravel, and avoiding weed sites) and reactive measures (revegetation and noxious weed treatments) this risk is extremely small and will not impact noxious weed establishment.

3.3 EFFECTS OF THE NO ACTION ALTERNATIVE

Under the No Action Alternative, the Proposed Action would not be approved. Tetuan would not construct the drill pad, access road or conduct exploration activities. There would be no impacts to any of the resources present and affected.

3.3.1 Air Quality and Climate

Under the No Action Alternative the local air quality would not be impacted by the proposed construction and drilling. There would be no additional fugitive dust or exhaust emissions produced and air quality would remain the same as it is today, impacted only by existing vehicular traffic and the railroad.

3.3.2 Cultural Resources

Under the No Action Alternative there would be no surface disturbance to known or unknown cultural resources and any cultural resources present would continue to be impacted by existing uses, including vandalism, unauthorized collection, and OHV impacts.

3.3.3 Native American Concerns

No Native American Concerns have been identified associated with the proposed activities nor with the No Action Alternative.

3.3.4 Water Quality (Surface/Ground)

Under the No Action Alternative no surface or groundwater would be affected so the limited surface flows and existing groundwater would continue as it is today. Groundwater would continue to be used by existing wells and surface flows would continue over the Project Area to the Humboldt River. Sedimentation would continue un-changed from recent past observed rates.

3.3.5 Soils

Under the No Action Alternative no new surface disturbance to soils would occur. Soils would continue to be affected by existing roads, railroad grades, agriculture to the east, the existing gravel pits, and other disturbed areas including burned areas. Limited water and wind erosion would continue in areas of bare ground and disturbance.

3.3.6 Wetland and Riparian Areas

Under the No Action Alternative no wetland or riparian areas would be affected by the proposed action. Surface flows would continue over the Project Area to the Humboldt River and associated wetland and

riparian areas. The wetland and riparian areas will continue to be affected by OHV use and livestock grazing. Some sediment would be contributed from existing roads, railroad grades, agriculture to the east, the existing gravel pits, and other disturbed areas including burned areas.

3.3.7 Terrestrial Wildlife

Under the No Action Alternative terrestrial wildlife would not be affected by the temporary habitat loss and disturbance that would have accompanied the proposed action. Wildlife would continue to be affected by the existing low level of effects from OHV use, recreation, and livestock grazing as they are now.

3.3.8 Special Status Species

The habitat loss and disturbance that would have been caused to pygmy rabbits on approximately six acres would be avoided under the No Action Alternative. The existing low level of effects from OHV use and livestock would continue but the proposed area of the road and drill pad construction would not be impacted and rabbits would not be temporarily disturbed by the construction and drilling activity.

3.3.9 Migratory Birds

The habitat loss and disturbance that might have been caused to migratory birds on the approximately six acres of habitat would be avoided under the No Action Alternative. The existing low level of effects from OHV use and livestock would continue but the area of the proposed road and drill pad would not be impacted and birds would not be temporarily disturbed by the construction and drilling activity.

3.3.10 Vegetation, Including Invasive Non-Native Plant Species

Under the No Action Alternative no disturbance to native vegetation would occur. The existing invasive species would continue to occupy much of the site and noxious weeds would be given less of an opportunity to establish and expand.

3.4 CUMULATIVE EFFECTS

As defined in 40 CFR 1508.7 (Council on Environmental Quality [CEQ] regulations for implementing the NEPA) a cumulative impact is an impact on the environment that results from the incremental impact of the action when added to other past, present, and Reasonably Foreseeable Future Actions (RFFAs), regardless of which agency (federal or nonfederal) or person undertakes such other actions. Cumulative effects can result from individually minor, but collectively significant, actions taking place over a period of time. The resources to be analyzed in the cumulative effects section are those for which the Proposed Action would have an impact and include the following: Air Quality, Water, Soils, Wetlands and Riparian Areas, Terrestrial Wildlife, Special Status Species, Migratory Birds, and Vegetation.

The Cumulative Effects Study Areas (CESAs) are identified and acreages identified in the table below and illustrated in Figures 8-10.

Table D. Cumulative Effects Study Areas

Resource CESAs	Acres
Figure 8, Non-native invasive and Noxious Species/ Vegetation/ Wetland and Riparian	20,280 ac
Figure 9, Greater Sage Grouse Population Management Unit	1,014,674 ac
Figure 10, Watershed: Air Quality/ Water Quality (Surface/Ground)/Climate and Terrestrial Wildlife/Sensitive Wildlife Species/Migratory Birds	1,764,624 ac
Figure 11, Soils	2,064 ac

Rationale for CESA selection is outlined below:

Wetland and Riparian/Vegetation:

Although not affected by the proposed action, livestock grazing is the principle land use directly impacting vegetation within the project area. Three grazing allotments managed by the BLM, the Metropolis, City and Wells Allotments, contain all the proposed disturbance for this exploration drill project including the access road and gravel pits. The portion of the Humboldt River which the uplands directly drain also lies within these allotment. Therefore, the boundary of these three allotments was selected as the CESA for vegetation and wetland and riparian resources.

Invasive, Non-native Plant Species:

Since grazing is one of the land uses would most impact vegetation within these three BLM-administered grazing allotments it makes sense to use the Metropolis and Wells allotment boundaries for this CESA. By using these allotments it will also provide a large enough scale from which to analyze the metapopulations of invasive and non-native plant species.

Soils:

Although the disturbance from the well pad, access road and gravel pit #2 are dispersed across several sections, the impacts to soils are very localized. Therefore, the CESA is only a one-half mile buffer around the project area.

Greater sage-grouse:

The CESA for Greater sage-grouse is the O'Neil population management unit (PMU) for sage grouse as identified by Nevada Department of Wildlife. Greater sage-grouse are managed by these population management units by the State of Nevada.

Water Quality (surface/ground):

The project is within the Upper Humboldt watershed and would impact the downstream, downgradient portions of this 1,764,624 acre area.

Air Quality:

The Upper Humboldt watershed is a part of the larger air quality basin and was selected because of the very local nature of any air quality impacts this project may create.

Climate:

This well drilling project is temporary and local in scope. Since this projects impacts on climate are tied mainly to air quality, the Upper Humboldt watershed was selected as the CESA for Climate.

Terrestrial Wildlife, Sensitive Wildlife Species other than Greater sage-grouse, and Migratory Birds:

The Upper Humboldt watershed boundary was selected as the CESA for wildlife species because most wildlife complete a major portion of their life cycle within this area, or at least a major portion of the part of their life cycle that is completed on the Elko District.

Within one or more of the CESAs the following past present and future actions (RFFAS) will be considered for analysis of the Cumulative Effects;

Mineral development – There are several mineral material pits on both public and private land that have been active from time to time. One or more new material pits may be developed to meet local demand. There has been very limited exploration or development under the mining law and no new significant prospects have been identified. Other oil and gas exploration should be anticipated given the existing leases. Future production from this proposed well can be anticipated as an RFFA as well as future production from other exploration wells.

Agriculture – There are two center pivots on the City of Wells property used to discharge waste water. There is livestock grazing within the Project Area on public and private land and hay production along the Humboldt on private land. There is a trend in Nevada for more cultivation using more efficient irrigation (sprinklers) and that could occur on nearby private land, probably for increased hay production as is the case on the nearby Wells property.

Fire – The Alazon Fire burned part of the Project Area and surrounding sagebrush communities in 2000. It is likely in the near future that additional acres could be burned given the fire history, cheatgrass presence and proximity of the very active railroad line.

Rights of Way and Other Facilities– There are numerous rights of ways (See Land Use in 3.2.11) for roads, utilities, communication sites, and the railroad within the Project Area, and it is reasonable to assume that there may be more in the foreseeable future. The major past actions include an irrigation and water treatment plant, the historic railroad grade, the Metropolis road, several two track and lightly improved secondary roads, the Southern Pacific railroad, utility lines to the north and south, several buildings along the Metropolis road, and two communication sites on hills to the northeast of the project.

Recreation and OHV – The area receives light dispersed recreation use and OHV activities which have resulted in the creation or perpetuation of many “two track” routes. This activity is expected to continue and may even increase slightly in the near future.

Urban Expansion – The City of Wells is nearby and represents a past and present use. It is expected that while the community could be described as stable or even stagnant (no expansion or growth activity), if oil is discovered or the economy improves, some limited urban expansion should be expected. This could include utility and transportation rights of way, land tenure adjustments, commercial and residential construction, and increased use of public lands.

3.4.1 Analysis of Cumulative Effects

3.4.1.1 Air Quality and Climate

The past, present and future actions do not have much impact on air quality because of the lack of significant emissions, the rapid dispersal due to prevailing winds and the vastness of the airshed. Air quality is generally good and thus considered to be in attainment of National Ambient Air Quality Standards. This condition is

not expected to change as a cumulative effect unless a major oil field is discovered and includes hundreds of producing wells.

3.4.1.2 Cultural Resources

Cultural resources will be affected by most of the anticipated present and future actions in that continued or increased human presence almost always results in increased illegal collection and vandalism. BLM and SHPO programs to identify, protect, and preserve cultural resources are not 100% effective so any increase in surface disturbance and human use will result in impacts.

3.4.1.3 Native American Concerns

Native American concerns will be affected by most of the anticipated present and future actions in that continued or increased human presence almost always results in increased illegal collection and vandalism as well as conflicts with traditional uses and values. BLM consultation processes to identify and address Native American concerns are not 100% effective, so any increase in surface disturbance and human activity has the potential to generate concerns and in some case irresolvable differences. This would be particularly true if a major oil field were developed.

3.4.1.4 Water Quality (Surface/Ground)

Effects to water (surface and ground) from past, present and future actions is expected to be highly localized and very limited, again unless a major oil field were developed. The limited size of the proposed action (six acres) and of most of the past, present and future actions (linear rights of way, small mineral material pits, etc.) and the fact that most of these actions only use small quantities of water will limit the cumulative effects. If a major oil field were developed there may be much larger effects to surface and ground water during both exploration and production. Because the basin is essentially fully appropriated in terms of water rights, any new use would have to be a conversion from one type of use to another, so the net effect on groundwater would be minimal. Surface runoff, erosion, and water pollution would become a larger concern if an oil field were developed.

3.4.1.5 Soils

While the cumulative effects on soils would also be limited in size, there could be occasional wind and water erosion and therefore loss of soil during exploration and development activities associated with any of the RFFAs. Most of the local soils have low to moderate erosion hazards due to their high infiltration and coarse texture. The soils are subject to erosion to surface runoff or high winds if left bare and unprotected.

3.4.1.6 Wetlands and Riparian Areas

No wetlands or riparian areas are directly affected by the proposed action and would likely be avoided in any RFFAs as well. There is the potential that wetland or riparian areas could be affected by RFFAs due to runoff or sedimentation from disturbed sites or RFFAs being located in wetland or riparian habitat types. If an oil field were developed, or a large linear right of way or large mine were developed, it is likely that some impact to wetlands or riparian areas would occur due to the large size of these kinds of actions and the probability that the need to be located to meet the purpose and need would impact wetlands or riparian areas.

3.4.1.7 Terrestrial Wildlife

Terrestrial wildlife (deer, antelope, resident birds, reptiles, small mammals, etc.) will be incrementally affected by all of the past, present and future activities because these species are found almost everywhere

and are highly mobile. The primary mechanism of the effects is from direct habitat loss or conversion, habitat fragmentation, or disturbance during critical seasons (breeding, nesting, rearing of young, and critical wintering) of their lifecycles. Because of the huge area of available habitat within the CESA, the cumulative effects are not expected to be major or to have important impacts to species' populations. In addition, some of the effects can be mitigated by special stipulations and mitigation measures such as seasonal restrictions, habitat compensation or replacement, habitat enhancement, etc.

3.4.1.8 Sensitive Species

Sensitive species (Greater sage-grouse, pygmy rabbits, raptors, owls, bats, etc.) are generally protected and/or avoided for any activities on public land but may not be protected for actions on private land unless they are actually Federally Listed or State Protected. There is special concern for several species (such as Greater sage-grouse, pygmy rabbits) although they are still hunted. These species and several others (such as sagebrush obligates) have been subjected to a long period of incremental habitat loss so additional measures are generally taken to avoid further incremental loss. Nearly all sensitive species will be affected by the RFFAs to a limited degree unless the impacts are avoided or mitigated.

3.4.1.9 Migratory Birds

Migratory birds (primarily passerine species plus waterfowl and shorebirds) are generally protected and/or avoided for any activities on public land but may not be protected for actions on private land unless they are protected by the state and the state is a participant. There is special concern for several species (such as BLM sensitive species). These species and several others (such as sagebrush obligates) have been subjected to a long period of incremental habitat loss so additional measures are generally taken to avoid further incremental loss. Nearly all migratory birds will be affected by the RFFAs to a limited degree, but special seasonal restrictions and pre-disturbance surveys are used to minimize or avoid the impacts. The impacts are normally avoided or mitigated for federal activities but may not be avoided or mitigated for activities occurring on private land or undertaken by private entities on private land.

3.4.1.10 Vegetation, Including Invasive Non-Native Plant Species

Past, present, and reasonably foreseeable activities that could impact vegetation, invasive non-native plants, and noxious weeds within the CESA include: wildland fire, oil and gas exploration, dispersed recreation (i.e. Hunting, camping, etc.), grazing, and city development in and around the city of Wells, and on/off highway vehicle (OHV) use. This disturbance is of a small enough scale and size that it will not have a negative cumulative impact on this resource.

BLM concludes that cumulative impacts would be negligible as a result of the proposed action.

3.5 MITIGATION AND MONITORING

Tetuan holds the oil and gas lease (NVN-074543), and the application is for drilling the Marys River APD 34-26 well and construction of an access road. The area has been leased subject to standard lease terms, and with the special stipulation for sage grouse. Section 6 of the standard federal oil and gas lease (Form 3100-11) provides the BLM with authority to require reasonable measures to minimize adverse impacts to cultural and natural resources, consistent with lease rights granted. As a result of the analysis in this EA, the Wells Field Office recommends the following mitigation and monitoring measures be required as a condition of approving the APD.

3.5.1 Cultural Resources and Tribal Consultation

Although no sites eligible for the National Register of Historic Properties were identified as a result of inventory and site visits, the approval of the APD should provide notice of the following requirements for all operations of this project (OG-010-05-03):

If historic properties and/or resources protected under the National Historic Preservation Act (NHPA), American Indian Religious Freedom Act, Native American Graves Protection and Repatriation Act, E. O. 13007 [Sacred Sites], or other statutes and executive orders are encountered, the BLM will not approve any ground disturbing activities that may affect any such properties or resources until it completes its obligation under applicable requirements of NHPA and other authorities. The BLM may require modifications to exploration or development proposals to protect such properties, or disapprove any activity that is likely to result in adverse effects that cannot be successfully avoided, minimized or mitigated.

During the project activities, if any cultural properties, items, or artifacts (stone tools, projectile points, etc...) not previously recorded by BLM are encountered, it must be stressed to those involved in Oil Well Exploration that such items are not to be collected and that the BLM, Elko Field Office must be notified of the discovery. Cultural and archaeological resources are protected under the Archaeological Resources Protection Act and the Federal Land Management Policy Act. Also, though the possibility of disturbing Native American gravesites within the Project Area is extremely low, inadvertent discovery procedures must be noted. Under the Native American Graves Protection and Repatriation Act, section (3)(d)(1), it states that the discovering individual must notify the land manager in writing of such a discovery. If the discovery occurs in connection with an authorized use, the activity, which caused the discovery, is to cease and the materials are to be protected until the land manager can respond to the situation.

3.5.2 Water Resources, Wetlands and Riparian Areas

The Energy Policy Act of 2005 amended sections of the Clean Water Act to exempt oil and gas exploration and development activities from requirements for a National Pollution Discharge Elimination System (NPDES) permit. Implementation of Best Management Practices (BMPs) would minimize soil lost from the site. Installation of sediment filters such as straw waddles at key locations below the drill pad would prevent sediment from entering the surface water. Waddles placed across areas where water is likely to concentrate including trails, roads, disturbed areas and headwaters of gully channels will reduce flow velocities and opportunities or sediment transport to wetland and riparian areas.

3.5.3 Terrestrial Wildlife

Sage Grouse - The area is not in crucial winter habitat for sage grouse (OG-010-05-09). However, brood-rearing may occur in habitat near the access road or well pad site. Approval of the surface use plan, including construction of the access road and drilling of the well, should be conditioned upon the following:

Seasonal restrictions from disturbance in sage grouse brood-rearing areas apply within 0.5 miles or other appropriate distance based on site-specific conditions from 3/15 to 7/31, inclusive. This restriction does not apply to operating facilities (OG-010-05-08).

Raptor Nests – Active raptor nesting sites are subject to seasonal protection from disturbance to avoid displacement and mortality of raptor young (OG-010-05-01). Restrictions apply to active nesting sites during the critical period identified.

These restrictions and dates will be updated to conform to BLM's most recent guidelines. (Restrictions and dates have been updated as outlined in Appendix A.)

Disturbance is planned outside of the nesting season. However, if construction of the access road or well site

is [re]scheduled during the raptor nesting period (generally January 1 through July 31), then the operator will utilize a qualified wildlife biologist to inventory the areas prior to disturbance for active nests. Any nesting activity should be reported to the BLM and Nevada Department of Wildlife for a determination of appropriate mitigation measures.

Pygmy Rabbits - Equipment and personnel are restricted from entering the pygmy rabbit colony vicinity.

3.5.4 Vegetation/Noxious Weeds, Invasive and Non-native Plant Species

All equipment and vehicles will be washed at an off-site facility before arriving at the project area. This will remove all dirt, debris, and weed seeds which will prevent the establishment of new noxious weeds within the project area. Once the disturbance is completed Tetuan Resources will be responsible for noxious weed control within and adjacent to the project area until a stable plant community is established.

3.5.5 Reclamation

The BLM recommended seed mixture should be sown during the fall or early winter season, immediately following the seedbed preparation. Following seeding, a fence meeting BLM specifications should be constructed around the drill pad area. This fence should remain in place for a period of three growing seasons to promote successful revegetation of the disturbed area. The fence would be removed following BLM determination that the reclamation is successful.

3.5.6 Monitoring

At least four inspections would be done by BLM personnel to monitor the operations. The first would be done during the pre-drill meeting before any disturbance occurs, one inspection would be done while the drill rig is on location and one inspection following reclamation of the site. Monitoring of the pygmy rabbit colony will require a qualified biologist. Monitoring the activity state of the colony will occur once halfway into the exploration activities, once directly after exploration activities cease and once one (1) month after exploration activities cease or a specified intervals if further well production is to occur. Criteria to be assessed at the colony site include: individuals present, fresh scat, utilized burrows or new burrows and spoor (tracks). If monitoring demonstrates an adverse effect on the activity of the colony, future mitigation measures will be considered.

4 CONSULTATION and COORDINATION

4.1 PREPARERS and ID TEAM

Bill Ehni	Tetuan Field Representative
Dave Gibson	Construction Contractor
Terry Reed	AMEC Environmental Manager
Nancy Santos	AMEC Wildlife Biologist
Craig Hauer	AMEC Archaeologist
John Menghini	BLM Fluid Mineral Lead
Darrell Carter	BLM Petroleum Technician
Frank Bergwall	BLM Geologist/Project Lead
Bryan Fuell	BLM Wells Field Manager
Bryan Mulligan	BLM Natural Resource Specialist, Weeds
Nycole Burton	BLM Natural Resource Specialist, Wildlife Biology
Joey James Giustino	BLM Lands and Realty Specialist
Jill Jensen	BLM Archaeologist
Donna Jewell	BLM Supervisory Natural Resource Specialist
Sara Ferriera	BLM Land Law Examiner
Tamara Hawthorne	BLM Outdoor Recreation Planner

4.2 PERSONS, GROUPS AND AGENCIES CONSULTED

Nevada Natural Heritage Program - Erik Miskow
Nevada Department of Wildlife – Timothy Herrick
US Fish and Wildlife Service
Wells Band of the Te-Moak Tribe of Western Shoshone
City of Wells
Elko County

5 REFERENCES

US Climate Data 2011 <http://www.usclimatedata.com/climate.php?location=USNV0099>, accessed 4/27/2011 10:55 AM

Nevada Air Quality Trend Report 1998-2009, January 2011, Nevada Department of Environmental Protection

BLM Environmental Assessment RubyFed 1-11 Oil Well, October 2008

BLM, 1983 Resource management Plan and EIS, 1983

BLM, 2005 EA for Oil and Gas Leasing, 2005

APPENDIX A
STANDARD STIPULATIONS FOR OIL AND GAS PROJECTS

Standard Stipulations for Oil and Gas Projects

Cultural Resources

1. **Coordination and Consultation.** If historic properties and/or resources protected under the National Historic Preservation Act (NHPA), American Indian Religious Freedom Act, Native American Graves Protection and Repatriation Act, E. O. 13007 [Sacred Sites], or other statutes and executive orders, the BLM will not approve any ground disturbing activities that may affect any such properties or resource until it completes its obligation under applicable requirements of NHPA and other authorities. The BLM may require modifications to exploration or development proposals to protect such properties, or disapprove any activity that is likely to result in adverse effects that cannot be successfully avoided, minimized or mitigated.
2. **Inadvertent Discovery.** During the project activities, if any cultural properties, items, or artifacts (stone tools, projectile points, etc...) not previously recorded by BLM are encountered, it must be stressed that such items are not to be collected and that the BLM, Elko Field Office must be notified of the discovery (775-753-0200). Cultural and archaeological resources are protected under the Archaeological Resources Protection Act and the Federal Land Policy and Management Act. Although the possibility of disturbing Native American gravesites within the Project Area is extremely low, inadvertent discovery procedures must be noted. The Native American Graves Protection and Repatriation Act, section (3)(d)(1), requires that the discovering individual must notify the land manager in writing of such a discovery. If the discovery occurs in connection with an authorized use, the activity, which caused the discovery, is to cease and the materials are to be protected until the land manager can respond to the situation.
3. **Cultural Resources .**
This lease may be found to contain historic properties and/or resources protected under the National Historic Preservation Act (NHPA), American Indian Religious Freedom Act, Native American Graves Protection and Repatriation Act, E.O. 13007, or other statutes and executive orders. The BLM will not approve any ground disturbing activities that may affect any such properties or resources until it completes its obligations under applicable requirements of the NHPA and other authorities. The BLM may require modification to exploration or development proposals to protect such properties, or disapprove any activity that is likely to result in adverse effects that cannot be successfully avoided, minimized or mitigated.
Authority: BLM Washington Office Instruction Memorandum 2005-03
4. **Congressionally designated historic trails .**
This parcel includes lands within one mile of the center of Congressionally designated historic trails. Fluid mineral leasing activities within one mile of the center of Congressionally designated historic trails may be limited or modified to protect the historical and scenic values of the trails.
Authority: Nevada BLM Instruction Memorandums 2004-004 and 2004-006

Soil and Water Resources, Wetlands and Riparian Areas

1. Implementation of Best Management Practices would minimize soil lost from the site. Installation of sediment filters such as straw waddles at key locations to prevent sediment from entering surface water. Waddles placed across areas where water is likely to concentrate including trails, roads, disturbed areas and headwaters of gully channels will reduce flow velocities and opportunities for sediment transport to wetland and riparian areas.

Wildlife

1. **Sage Grouse.** Brood rearing may occur in habitat near the access road or well pad site. Approval of the surface use plan, including construction of the access road and drilling of the well, should be

conditioned upon the following: *Seasonal restrictions from disturbance in sage grouse brood rearing areas apply within three miles or other appropriate distance based on site-specific conditions from 3/15 to 7/31, inclusive. This restriction does not apply to operating facilities.*

2. **Raptor nesting sites.**

Construction, decommissioning, and major maintenance will be subject to seasonal and spatial protection from disturbance to avoid displacement and mortality of raptor young. BLM will require migratory bird nesting surveys to be conducted by a BLM-approved wildlife biologist using current United States Fish and Wildlife Service protocols. Such surveys shall be conducted no more than 14 days prior to commencement of surface-disturbing activities in the area. If disturbance does not occur within 14 days of the survey, the site shall be resurveyed. If during any surveys, nests or nesting behavior are documented, the area must be avoided until the young have fledged from the nest or the nest fails. Nest results will be determined by the above-mentioned wildlife biologist. Survey results shall be reported to the BLM and Nevada Department of Wildlife once the survey is completed. Compliance with this stipulation does not constitute full compliance with, or exemption from, the Migratory Bird Treaty Act as amended (16 United States Code §§ 703-712) or any other legislation. (Restrictions meet the intent of the 1985 Wells RMP but have been updated based on current literature.)

Authority/Supporting Documentation: Wells RMP ROD (p. 25); Elko RMP ROD (p. 25), Birds of the Great Basin, 1985; State Director Decision: Horse Canyon Decision, 2005

Species	Seasonal Buffer ¹	Spatial Buffer ²
Turkey Vulture	2/1 ³ – 8/15	0.5 mile ¹
Northern Harrier	4/1 – 8/15	0.25 mile
Cooper's Hawk	3/15 – 8/31	0.25 mile
Sharp-shinned Hawk	3/15 – 8/31	0.25 mile
Northern Goshawk	3/1 – 8/15	0.5 mile
Red-tailed Hawk	3/15 – 8/15	0.33 mile
Swainson's Hawk	3/1 – 8/31	0.25 mile
Ferruginous Hawk	3/1 – 8/1	1.0 mile
Golden Eagle	1/1 – 8/31	0.5 mile
Bald Eagle	1/1 – 8/31	1.0 mile
American Kestrel	4/1 – 8/15	0.125 mile
Prairie Falcon	3/1 ³ – 8/31	0.5 mile
Peregrine Falcon	2/1 – 8/31	1.0 mile
Barn Owl	2/1 – 9/15	0.125 mile
Long-eared Owl	2/1 – 8/15	0.125 mile
Short-eared Owl	3/1 – 8/1	0.25 mile
Flammulated Owl	4/1 – 9/30	0.25 mile
Western Screech-owl	3/1 – 8/15	0.125 mile
Great Horned Owl	12/1 – 9/30	0.125 mile
Northern Pygmy Owl	4/1 – 8/1	0.25 mile
Burrowing Owl	3/1 – 8/31	0.25 mile
Northern Saw-whet Owl	3/1 – 8/31	0.125 mile

¹From Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances (USFWS).

²From Guidelines for Raptor Conservation in the Western United States, except where noted (USFWS).

³From Nevada Raptors: Their Biology and Management (NDOW).

3. **Threatened, Endangered, and Special Status Species.**

The lease area may now or hereafter contain plants, animals, or their habitats determined to be threatened, endangered, or other special status species. BLM may recommend modifications to exploration and development proposals to further its conservation and management objective to avoid BLM-approved activity that will contribute to a need to list such a species or their habitat. BLM may require modifications to or disapprove proposed activity that is likely to result in jeopardy to the continued existence of a proposed or listed threatened or endangered species or result in the destruction or adverse modification of a designated or proposed critical habitat. BLM will not approve any ground-disturbing activity that may affect any such species or critical habitat until it complete its obligations under applicable requirements of the Endangered Species Act as amended, 16 USC &1531 et seq., including completion of any required procedure for conference or consultation.

Authority: BLM Washington Office Instruction Memorandum 2002-174; Endangered Species Act

4. **Pronghorn Antelope Kidding Areas**

This lease contains lands which have been identified as pronghorn antelope kidding areas (BLM EA 2005/030, September 2005). These lands are subject to seasonal protection from disturbance to avoid displacement and mortality to animals during kidding season.

Seasonal restrictions from disturbance in pronghorn antelope kidding areas apply during the period 5/1-6/30, inclusive.

Authority/Supporting Documentation: Elko RMP (pg. 2-6), ROD, Field Guide to Mammals (1976) OG-010-05-07

5. **Sage Grouse Brood Rearing Areas.**

This lease contains lands which have been identified as sage grouse brood rearing areas that are subject to seasonal protection from disturbance.

- a) Seasonal restrictions from disturbance in sage grouse brood rearing areas apply within 0.5 miles or other appropriate distance based on site-specific conditions from 3/15 to 7/31, inclusive. This restriction does not apply to operating facilities.

Authority/Supporting Documentation: Wells RMP ROD (p. 25); Elko RMP ROD (p. 3 and 36) Management Guidelines for Sage Grouse and Sagebrush Ecosystems in Nevada, 2000, State Director Decision: Horse Canyon Decision, 2005

Vegetation/Noxious Weeds/Reclamation

- 1. To minimize impacts to vegetation and reduce the risk of invasion by weeds all project personnel must comply with the following project specific stipulations:
 - a. Blading during construction operations could spread noxious weeds into the disturbed areas. Washing the construction equipment prior to road and drill pad construction at an appropriate equipment-cleaning site agreed to by the BLM and The Rock Investment Group will reduce the chance of spreading noxious weeds. Project related equipment, vehicles and machinery

will be cleaned using compressed air or water to remove mud, dirt and plant parts before moving into or from relatively weed free areas.

- b. Reseed areas along the drill pad and access road following construction using the BLM approved seed mixture (Table A). All purchased seed must be tested by a certified seed lab and the results approved by BLM prior to application. Any seed substitutions must be approved by BLM.
- c. Treatment and control strategies will be required should new infestations occur. If chemicals must be used, the herbicide must be a BLM approved and proper chemical application methods and formulas adhered to.
- d. The BLM approved reclamation seed mixture shall be sown during the fall or early winter season, immediately following the seedbed preparation. Following seeding, a fence meeting BLM specifications must be constructed around the drill pad area. This fence should remain in place for a period of three growing seasons to promote successful revegetation of the disturbed area. The fence will be removed following BLM determination that the reclamation is successful.

Recreation

1. I-80 “low visibility corridor”

This parcel includes lands within the I-80 Visual Corridor. Visual impacts are to be minimized within 1.5 miles on either side of Interstate 80. Within this three-mile wide Low Visibility Corridor, the objective is for management actions not to be evident in the characteristic landscape.

Management objectives for Class II VRM areas will be used as a guideline when evaluating projects within the Low Visibility Corridor. The Class II VRM objective is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

Authority: Wells RMP ROD (p. 3); Elko RMP ROD (p. 1); Elko Field Office IM NV-2004-013)

Native American Concerns

This mitigation measure requires that no ground disturbing actions take place within a ¼ mile diameter area centered on the expression of any hot spring.

Appendix B

FIGURES

For Figures, please see separate document on web page.

Appendix C

PHOTOS



Photo No. 1388 Looking NE toward Radio Tower from Two Track in Sec 36.



Photo No. 1372 Looking SW from two track in Sec 36 with RR line in background.



Photo No. 1368 Looking NE across center pivot field in Section 32.



Photo No. 1381 Center of original proposed drill pad (adjacent to revised location) in Sec 26 looking NE.



Photo No. 1375 Looking SW where two track leaves historic RR, near California Trail.



Photo No. 1374 Looking N along RR grade in Sec 31 with California Trail marker in foreground.



Photo No. 1382 At proposed well pad looking W.



Photo No. 1386 Looking N with building in middle ground from access route in Sec 36.

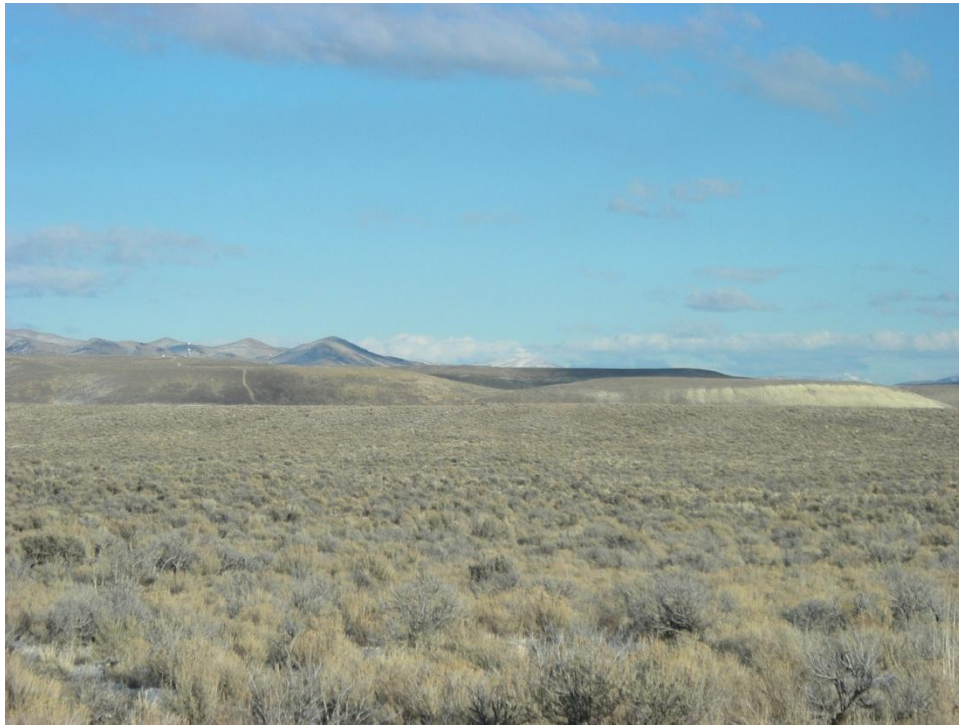


Photo No. 1387 Looking NE at communication tower along proposed access route in Sec 36.